

NPDES PERMIT NO. TX0134072
STATEMENT OF BASIS

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
(NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

APPLICANT:

Dan A. Hughes Company
Dilworth Discharge Pit
P.O. Drawer 669
Beeville, TX 78104

ISSUING OFFICE:

U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

PREPARED BY:

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DATE PREPARED:

February 21, 2019

PERMIT ACTION

It is proposed that the facility be issued an NPDES permit for a 5-year term in accordance with regulations contained in 40 Code of Federal Regulations (CFR) 122.46(a).

40 CFR CITATIONS: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations, current as of February 7, 2019.

RECEIVING WATER – BASIN

Skimming Pit then into stock pond, thence to Rockaway Creek, thence to the Frio River (Stream Segment No. 2117).

DOCUMENT ABBREVIATIONS

For brevity, Region 6 used acronyms and abbreviated terminology in this Statement of Basis document whenever possible. The following acronyms were used frequently in this document:

BAT	Best Available Technology Economically Achievable)
BOD ₅	Biochemical oxygen demand (five-day unless noted otherwise)
BOPD	Barrels of oil per day
BPJ	Best professional judgment
CFR	Code of Federal Regulations
cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
F&WS	United States Fish and Wildlife Service
GPD	Gallon per day
IP	Procedures to Implement the Texas Surface Water Quality Standards
µg/l	Micrograms per liter (one part per billion)
mg/l	Milligrams per liter (one part per million)
Menu 1	Intermittent stream that does not enter perennial pools
MGD	Million gallons per day
MSGP	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System
MQL	Minimum quantification level
O&G	Oil and grease
RRC	Railroad Commission of Texas
RP	Reasonable potential
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TDS	Total dissolved solids
TMDL	Total maximum daily load
TOC	Total Organic Carbon
TRC	Total residual chlorine
TSS	Total suspended solids
TSWQS	Texas Surface Water Quality Standards
WET	Whole effluent toxicity
WQMP	Water Quality Management Plan
WQS	Water Quality Standards

I. PROPOSED CHANGES FROM PREVIOUS PERMIT

New Discharger

II. APPLICANT LOCATION and ACTIVITY

Under the SIC Code 1311, the applicant is engaged in crude petroleum and natural gas extraction.

As described in the application, the skimming pit is located at Lat: 28° 27' 16" N, Long: 98° 40' 07" W, McMullen County, Texas. Discharge is located on the Frio River at Outfall 001: Latitude 28° 27' 9" N; Longitude 98° 40' 1" W

III. PROCESS AND DISCHARGE DESCRIPTION

The facility, Dan A. Hughes Company, has the following leases with the respective discharge volumes in MGD:

Lease	Receiving Stream	Average Flow	Maximum Flow	Wells
Dilworth	Skimming Pit then into stock pond, thence to Rockaway Creek, thence to the Frio River (Stream Segment No. 2117) of the Nueces River Basin.	0.21 MGD	0.21 MGD	3, 4, 5, 6, 7, 8, 10, 13, 14, 15, 18, 19 & 20

The facility is a continuous discharger of produced water from the Carrizo formation that is produced with oil from existing oil wells referenced above. The oil and water emulsion go through a two-stage separation process consisting of two gun-barrels. The oil goes to the oil storage facility, and the water goes through a third gun-barrel from which the water goes to the first small pond, then to the larger retention pond and then to Rockaway Creek. A skimmer system used for the surface of the water (when and if required) consisting of a long piece of PVC pipe connected to a vacuum truck.

Current average is 300 bbls (12,600 gallons) to 350 bbls (14,700 gallons) per day. The facility has the capacity of 5000 bbls (210,000) per day of discharge from a total of 13 wells.

Table 1: Discharge Characteristics for Outfall 001

The table below shows facility's pollutant concentrations contained in the NPDES application.

Parameter	Maximum Concentration	Average Concentration
Flow, MGD	0.21 MGD	0.0147 MGD
pH, su	8.8 mg/L	8.8 mg/L
TSS	12 mg/L	12 mg/L
DO	8.1 mg/L	8.1 mg/L
Hardness	16.6 mg/L	16.6 mg/L
Oil & Grease	35 mg/L	25 mg/L
Ammonia (as N)	0.01 mg/L	0.01 mg/L
Temperature, winter, °F	NA	NA
Temperature, summer, °F	NA	NA
Sulfate	20 mg/L	20 mg/L

Parameter	Maximum Concentration	Average Concentration
Chloride	145 mg/L	145 mg/L
Total Dissolved Solids	2050 mg/L	2050 mg/L
Aluminum	0.0971 mg/L	0.0971 mg/L
Barium	0.0591 mg/L	0.0591 mg/L
Calcium	4.43 mg/L	4.43 mg/L
Iron	0.344 mg/L	0.344 mg/L
Manganese	0.005 mg/L	0.005 mg/L
Magnesium	1.34 mg/L	1.34 mg/L
Sodium	745 mg/L	745 mg/L
Potassium	5.23 mg/L	5.23 mg/L
Total Organic Carbon	32 mg/L	32 mg/L
Total Phenols	0.0248 mg/L	0.0248 mg/L

IV. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water;” more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

It is proposed that the permit be issued for a 5-year term following regulations promulgated at 40 CFR 122.46(a). This is a first-time permit issuance. An NPDES Application for a Permit to Discharge (Form 1) was received on September 18, 2018. Additional permit application information was received on November 13, 2018. The application was deemed administratively complete on November 19, 2018.

V. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITION FOR PERMIT ISSUANCE

Regulations contained in 40 CFR §122.44 NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, on best professional judgment (BPJ) in the absence of guidelines, and/or requirements pursuant to 40 CFR 122.44(d), whichever are more stringent. Technology-based effluent limitations are established in the proposed draft permit for Oil and grease. Water quality-based effluent limitations are established in the proposed draft permit for pH.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

BPT - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

Effluent Limitations

Produced Water discharges are covered under the effluent guideline for onshore oil and gas operations. These activities are subject to the Oil and Gas Extraction Point Source Category (40 CFR Part 435). Dilworth Lease falls under Subpart E - Agricultural and Wildlife Water Use Subcategory, which allows the discharge of produced water from facilities west of the 98th meridian for use in agricultural and wildlife propagation. The effluent guideline further requires “. . . that the produced water is of good enough quality to be used for wildlife or livestock watering or other agricultural uses and that the produced water is actually put to such use during periods of discharge.” The technology base limit for oil and grease is 35 mg/l.

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

3. State Water Quality Standards

The Clean Water Act in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR 122.44(d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant.

If the discharge poses the reasonable potential to cause an in-stream violation of narrative standards, the permit must contain prohibitions to protect that standard. Additionally, the TWQS found at 30 TAC Chapter 307 states that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Procedures to Implement the Texas Surface Water Quality Standards" (IP) is designed to ensure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

The IP document is not a state water quality standard, but rather, a non-binding, non-regulatory guidance document. See IP at page 2 stating that "this is a guidance document and should not be interpreted as a replacement to the rules. The TWQS may be found in 30 TAC Sections (§§) 307.1-.10."). EPA does not consider the IP to be a new or revised water quality standard and has never approved it as such. EPA did comment on and conditionally "approve" the IP as part of the Continuing Planning Process (CPP) required under 40 CFR §130.5(c) and the Memorandum of Agreement between TCEQ and EPA, but this does not constitute approval of the IP as a water quality standard under CWA section 303(c). Therefore, EPA is not bound by the IP in establishing limits in this permit – but rather, must ensure that the limits are consistent with the EPA-approved state WQS.

However, EPA has tried, where we believe the IP procedures are consistent with all applicable State and Federal regulations, to use those procedures. The general criteria and numerical criteria which make up the stream standards are provided in the 2018 EPA-approved Texas Surface Water Quality Standards, Texas Administrative Code (TAC), 30 TAC Sections 307.1 - 307.9, effective November 2, 2018. The designated uses of Frio River in Segment 2117 are primary contact recreation, high quality aquatic life and public water supply/aquifer protection use (applies to the contributing, recharge and transition zones of the Edwards Aquifer).

4. Reasonable Potential- Procedures

EPA develops draft permits to comply with State WQS, and for consistency, attempts to follow the IP where appropriate. However, EPA is bound by the State's WQS, not State guidance, including the IP, in determining permit decisions. EPA performs its own technical and legal review for permit issuance, to assure compliance with all applicable State and Federal requirements, including State WQS, and makes its determination based on that review.

Waste load allocations (WLA's) are calculated using estimated effluent dilutions, criteria outlined in the TWQS, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentrations that can be discharged and still meet instream criteria after mixing with the receiving stream. From the WLA, a long-term average (LTA) is calculated, for both chronic and acute toxicity, using a log

normal probability distribution, a given coefficient of variation (0.6), and either a 90th or a 99th percentile confidence level. The 90th percentile confidence level is for discharges to rivers, freshwater streams and narrow tidal rivers with upstream flow data, and the 99th percentile confidence level is for the remainder of cases.

For facilities that discharge into receiving streams that have human health standards, a separate LTA will be calculated. The implementation procedures for determining the human health LTA use a 99th percentile confidence level, along with a given coefficient of variation (0.6). The lowest of the calculated LTA; acute, chronic and/or human health, is used to calculate the daily average and daily maximum permit limits.

Procedures found in the IP for determining significant potential are to compare the reported analytical data either from the DMR history and/or the application information, against percentages of the calculated daily average water quality-based effluent limitation. If the average of the effluent data equals or exceeds 70% but is less than 85% of the calculated daily average limit, monitoring for the toxic pollutant will usually be included as a condition in the permit. If the average of the effluent data is equal to or greater than 85% of the calculated daily average limit, the permit will generally contain effluent limits for the toxic pollutant. The permit may specify a compliance period to achieve this limit if necessary.

Procedures found in the IP require review of the immediate receiving stream and effected downstream receiving waters. Further, if the discharge reaches a perennial stream or an intermittent stream with perennial pools within three-miles, chronic toxicity criteria apply at that confluence.

5. Permit-Action - Water Quality-Based Limits

Regulations promulgated at 40 CFR §122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). State WQS that are more stringent than effluent limitation guidelines are as follows:

a. pH

Nonhazardous produced water discharges from the facility into the skimming pit then into a stock pond, thence to Rockaway Creek, thence to the Frio River of the Nueces River Basin in McMullen County, TX. pH shall be limited to the standards for the Frio River in Water Body Segment No. 2117 of the Nueces River Basin to the range of 6.5 to 9.0 s.u.

b. Oil and Grease

To ensure that the produced wastewater is of sufficient quality for livestock and wildlife water use and for discharging to the Frio River, and therefore meets the requirements of Subparts E, the draft permit establishes a more stringent Oil and Grease limit of 10 mg/L monthly average, with a daily maximum limit of 15 mg/l. This limit is based on BPJ in accordance with 40 CFR 125.3(h)(1) and is consistent with other produced water permits issued by other EPA Regions.

c. Narrative Limitations

Narrative protection for aesthetic standards will propose that surface waters shall be maintained so that oil, grease, or related residue will not produce a visible film or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life. The discharge shall not present a hazard to humans, wildlife, or livestock.

The following narrative limitations in the draft permit represent protection of water quality for Outfall 001: “The effluent shall contain no visible film of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse.”

d. Oxygen Demand

To protect water quality from impacts to dissolved oxygen (DO) in the receiving water, a Chemical Oxygen Demand (COD) limit of 100 mg/L, daily maximum is established in the draft permit based on BPJ. The COD limit is consistent with other permits issued in Region 6.

e. Total Petroleum Hydrocarbons

Produced wastewater discharges may contain various organic chemicals, inorganic chemicals, metals, and naturally occurring radioactive materials (NORM). Monitoring and reporting requirements for Total Petroleum Hydrocarbons will be proposed based on BPJ. The data reported for these pollutants will be evaluated during the next permit cycle to see if a discharge limit is required.

f. Toxics

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR §122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant. The critical low flow, 7Q2 for the receiving stream is 0.09 cfs, while the harmonic mean is 0.27 cfs according to gage 08206600 on the Frio River at Tilden, TX. The facility proposes to discharge to an intermittent stream within three miles of a perennial freshwater body. The outfall discharges directly into a skimming pit, then into a stock pond, thence to the Rockaway Creek, thence to the Frio River in Texas Segment No. 2117.

The reasonable potential calculations were performed based on data obtained from the permit application. Segment specific values for pH, TSS, total hardness, TDS, chloride, and sulfate values were obtained from table D-21 of the IP. These values were also used in Menu 2 to calculate reasonable potential. The result of the Menu 2 model run revealed that none of the reported showed reasonable potential to violate TSWQS.

TDS, sulfate and chloride are present in the discharge and were screened using the procedures found on page 178 of the ITWQS for Unclassified Intermittent Stream within 3 Miles of a Perennial Freshwater Body. Based on these procedures, no permit limitations are needed for TDS, Chloride and Sulfate.

g. Solids and Foam

The prohibition of the discharge of floating solids or visible foam in other than trace amounts is established in the proposed permit. In addition, there shall be no discharge of visible films of oil, globules of oil, grease or solids in or on the water, or coatings on stream banks.

D. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, 40 CFR §122.48(b), and to assure compliance with permit limitations, 40

CFR §122.44(i)(1). The monitoring frequencies are based on BPJ, considering the nature of the facility, the previous permit and/or past compliance history.

Flow shall be measured weekly. pH, oil & grease, TDS, COD, sulfate, & chloride, shall be monitored twice a month, using grab sample. For any monitoring event, the first sample of any event shall be collected at least seven (7) days from the first sample of the previous monitoring event.

Total Petroleum Hydrocarbon, Benzene, BETX (sum of benzene, ethyl benzene, toluene and xylene), radium 226, radium 228, radium 226 + radium 228 and adjusted gross alpha shall be monitored once per three months using grab sample.

E. WHOLE EFFLUENT TOXICITY TESTING

Biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity.

Based on the IP, discharges into intermittent streams within three miles of a perennial freshwater body will conduct either a 48-hour acute or a chronic test depending on the size of the discharge relative to the flow of the perennial water downstream. The outfall discharges directly into a skimming pit, then into a stock pond, thence to the Rockaway Creek, thence to the Frio River in Texas Segment No. 2117. The critical dilution for this facility is 81%. Accordingly, the proposed permit requires that discharge to outfall 001 be monitored by a 7-day chronic toxicity test, with quarterly monitoring according to the provisions indicated in this permit.

OUTFALL 001

Based on the nature of the discharge; industrial, the estimated average flow; 0.21MGD, the nature of the receiving water; intermittent stream within three miles of a perennial freshwater body; and the critical dilution of 81%, the TCEQ Implementation Plan directs the WET test to be a 7-day chronic test using *Ceriodaphnia dubia* and *Pimephales promelas* at a once per 3 months frequency for the first year of the permit. If all WET tests pass during the first year, the permittee may request a monitoring frequency reduction for the either or both test species for the following 2-5 years of the permit. The vertebrate species (*Pimephales promelas*) may be reduced to once per year. The invertebrate species (*Ceriodaphnia dubia*) may be reduced to twice per year. If any tests fail during that time the frequency will revert back to the once per three months frequency for the remainder of the permit term. Both species shall resume quarterly monitoring at a once per three months frequency on the last day of the permit.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be 34%, 46%, 61%, 81%, and 100%. The low-flow effluent concentration (critical low-flow dilution) is defined as 81% effluent.

During the period beginning the effective date of the permit and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfall **001**. Discharges shall be limited and monitored by the permittee as specified below:

WHOLE EFFLUENT TOXICITY TESTING (7-Day Chronic Static Renewal/ NOEC) *	VALUE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<i>Ceriodaphnia dubia</i>	Report	Once/Quarter	24-Hr Composite
<i>Pimephales promelas</i>	Report	Once/Quarter	24-Hr Composite

* Monitoring and reporting requirements begin on the effective date of this permit. See Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions. Grab samples are allowed per method, if needed.

In addition to conducting the 7-day chronic test, the facility is required to conduct 24-hour acute tests using 100% effluent. This end-of pipe test measures compliance with 30 TAC §307.6 (e) (2)(B) of the TSWQS, which requires that greater than 50% of the test organisms survive exposure to 100% effluent for 24 hours. This provision is designed to ensure that water in the state will not be acutely toxic to aquatic life. The test shall be a 24-Hour, LC-50 at 100% critical dilution. This test shall be protective of the direct end-of-pipe discharge. The frequency for this test shall be once/six months.

During the period beginning the effective date of the permit and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfall 001. Discharges shall be limited and monitored by the permittee as specified below:

Whole Effluent Toxicity Testing (TX 24-Hr. LC50)	VALUE	FREQUENCY	TYPE
<i>Ceriodaphnia dubia</i>	Report	Once/6 Months	Grab
<i>Pimephales promelas</i>	Report	Once/6 Months	Grab

F. FINAL EFFLUENT LIMITATIONS

See the draft permit for limitations.

VI. FACILITY OPERATIONAL PRACTICES

A. WASTE WATER POLLUTION PREVENTION REQUIREMENTS

The permittee shall institute programs directed towards pollution prevention. The permittee will institute programs to improve the operating efficiency and extend the useful life of the treatment system.

B. OPERATION AND REPORTING

The permittee must submit Discharge Monitoring Report's (DMR's) quarterly, beginning on the effective date of the permit, lasting through the expiration date of the permit or termination of the permit, to report on all limitations and monitoring requirements in the permit.

Sufficiently Sensitive Analytical Methods (SSM)

The permittee must use sufficiently sensitive EPA-approved analytical methods (SSM) (under 40 CFR part 136 or required under 40 CFR chapter I, subchapters N or O) when quantifying the presence of pollutants in a discharge for analyses of pollutants or pollutant parameters under the permit. In case the approved methods are not sufficiently sensitive to the limits, the most SSM with the lowest method detection limit (MDL) must be used as defined under 40 CFR 122.44(i)(1)(iv)(A). If no analytical laboratory is able to perform a test satisfying the SSM in the region, the most SSM with the lowest MDL must be used after adequate demonstrations by the permittee and EPA approval.

VII. IMPAIRED WATER - 303(d) LIST AND TMDL

Wastewater discharges from the facility flow into Goose Creek, an intermittent stream, then to Atascosa River in Water Body Segment No. 2107 of the Nueces River Basin. The receiving stream is listed as impaired for bacteria in the 2014 State of Texas 303(d) List for Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs). Impairment for bacteria is under TCEQ's Category 5c. Category 5c implies that additional data or information will be collected and/or evaluated before a management strategy is selected. The facility does not discharge bacteria, as a result no further requirements for bacteria is required.

Please note the TCEQ has adopted the Draft 2016 Texas 303(d) List on October 17, 2018 and waiting for the US EPA Region 6 approval. In this draft report, the receiving stream is listed as impaired for bacteria, chloride and total dissolved solids under TCEQ's category 5c. No additional requirements beyond the already proposed technology-based and/or water-quality based requirements are needed in the proposed permit.

VIII. ANTIDegradation

The Texas Commission on Environmental Quality, Texas Surface Water Quality Standards, Antidegradation, Title 30, Part 1, Chapter 307, Rule §307.5 sets forth the requirements to protect designated uses through implementation of the State WQS. The limitations and monitoring requirements set forth in the proposed permit are developed from the State WQS and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water. This facility is currently authorized by the Texas Railroad Commission to discharge produced water.

IX. ANTIBACKSLIDING

The proposed permit is consistent with the requirements and exemption to meet Anti-backsliding provisions of the Clean Water Act, Section 402(o) and 40 CFR Part 122.44(i)(B), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless information is available which was not available at the time of permit issuance. Since this is a first time NPDES Permit for this discharge, anti-backsliding does not apply.

X. ENDANGERED SPECIES

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, <https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=48311>, five species are listed as endangered or threatened in McMullen County. The listed species are Red Knot (*Calidris canutus rufa*), Golden orb (*Quadrula aurea*), Black lace cactus (*Echinocereus reichenbachii* var. *albertii*), Gulf Coast Jaguarundi (*Herpailurus Yagouaroundi Cacomitli*), and Ocelot (*Leopardus Pardalis*). A description of the species and its effects to the proposed permit follows:

1. Red Knot is a medium-sized shorebird and the largest of the "peeps" in North America, and one of the most colorful. It makes one of the longest yearly migrations of any bird, traveling 15,000 km (9,300 mile) from its Arctic breeding grounds to Tierra del Fuego in southern South America.

Their diet varies according to season; arthropods and larvae are the preferred food items at the breeding grounds, while various hard-shelled molluscs are consumed at other feeding sites at other times.

The Red Knot nests on the ground, near water, and usually inland. The nest is a shallow scrape lined with leaves, lichens and moss. Males construct three to five nest scrapes in their territories prior to the arrival of the females. The female lays three or more usually four eggs, apparently laid over the course of six days. Both parents incubate the eggs, sharing the duties equally. The incubation period last around 22 days.

The birds have become threatened as a result of commercial harvesting of horseshoe crabs in the Delaware Bay which began in the early 1990s. Delaware Bay is a critical stopover point during spring migration; the birds refuel by eating the eggs laid by these crabs (with little else to eat in the Delaware Bay).

2. Golden orb is a freshwater mussel who lives burrowed in mixed mud, sand, and gravel at the bottom of rivers and streams. Some are adapted to the quiet water and muddy depths of lakes, ponds, and reservoirs. Unlike most animals, which must travel in search of food, their food—mainly tiny plants and animals called plankton suspended in the water—drifts to the mussels. By drawing water inside their shells through a siphon, their gills filter out food and take in oxygen. Mussels usually don't move much, but a muscular "foot" helps them burrow and allows limited travel if disturbed by floods or drought.

Habitat modification through manmade structures like dams and channel alterations has destroyed free flowing water habitats. These habitat changes restrict mussels and fish from dispersing, which results in small, isolated populations. In addition to habitat modifications, mussel populations are exposed to point source pollution and nonpoint source pollution such as toxic runoff containing fertilizers, herbicides and pesticides from land-use practices

3. Black lace cactus grows as a solitary stem or sometimes as a clump of 5 to 12 ribbed, cylindrical stems, each about 6 in (15 cm) tall. Each spine cluster is formed of 14 to 16 radial spines and crowned with a single, purple-tipped central spine. The common name for the species derives from the "lace-like" pattern of the spines over the stem. The pink to rose flowers, about 3 in (7.5 cm) in diameter, are showy and attractive.

The black lace cactus prefers poorly drained, sandy soils along stream beds on the Texas coastal plain. It tends to grow in slightly depressed areas that hold standing rainwater. Ground cover consists of mesquite and other scattered shrubs, interspersed with "islands" of hardy grasses and annuals. Colonies of the cactus are found in openings in the mesquite brush or in the midst of broom-weed and spiny aster stands with overhanging mesquite.

Biologists consider habitat loss and degradation the greatest threat to the cactus's survival. Much of the Texas coastal plain is cattle country, and it is common practice in the region to clear brush and undergrowth to plant coastal Bermuda grass for pastureland. This practice has partly or eliminated many known populations of the black lace cactus.

Because of the cactus's rarity and showy flowers, collectors also pose a threat. All three known populations are on private lands. Two of the three sites are not well-known and are inaccessible. This gives the species some protection from casual collectors, but not from professionals.

4. Gulf Coast Jaguarundi is a small weasel-like wild cat with short rounded ears. It is also called Otter cats because of their shot legs, slender elongated bodies, and small flattened heads, giving

them an otter-like appearance. They prefer lowland brush areas close to water or dense tropical areas as their habitat. They are good tree climbers and swimmers. Jaguarundis eat fish that they catch from streams and rivers. Mating occurs from September to November.

The cat is suffering decline due to loss of habitat. EPA has determined that the issuance of the permit will have “no effect” on the Gulf Coast Jaguarundi based on the limited information available on the species which indicates that in Texas, any current presence of jaguarundi apparently is confined to the southernmost four counties of Cameron, Willacy, Hidalgo and Starr.

5. Ocelot is a small cat, ranging from 15 to 30 pounds and measuring an average 3 feet 9 inches in length. Its coat has black spots, bars, and stripes on a rich tan to gray background, with irregular black dots on a white underside and dark bars on the tail. The ocelot is listed endangered due to habitat alteration and loss (primarily due to brush clearing), and predator control activities. EPA has determined that the issuance of the permit will have “no effect” on the Ocelot.

The Environmental Protection Agency has evaluated the potential effects of issuance of this permit upon listed endangered or threatened species. After review, EPA has determined that the issuance of this permit will have “*no effect*” on listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

The proposed permit establishes limits to meet the current state water quality standards for the area of discharge. The limits established in the proposed permit are protective and will have no impact on the habitats of this species. The permit includes limitations and/or monitoring requirements for pH, oil & grease, TDS, sulfate, chloride, dissolved oxygen, aluminum, total Petroleum Hydrocarbon, benzene, BETX (sum of benzene, ethyl benzene, toluene and xylene), radium 226, radium 228, radium 226 + radium 228 and adjusted gross alpha. The proposed permit also includes biomonitoring requirements for *Daphnia pulex* and *Pimephales promelas* (7-day static renewal). It also includes biomonitoring requirements for *Daphnia pulex* and *Pimephales promelas* (24-hr LC50). These requirements are also consistent with the State of Texas implementation guidance.

Based on information described above, EPA Region 6 has determined that discharges proposed to be authorized by the proposed permit will have no effect on the listed species in McMullen County. The standard reopener clause in the permit will allow EPA to reopen the permit and impose additional limitations if it is determined that changes in species or knowledge of the discharge would require different permit conditions.

XI. HISTORICAL AND ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The issuance of the permit should have no impact on historical and/or archeological sites since no construction activities are planned in the issuance.

XII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of the Texas WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the WQS are either revised or promulgated.

Should the State adopt a new WQS, and/or develop a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with 40 CFR §122.44(d). Modification of the permit is subject to the provisions of 40 CFR §124.5.

XIII. VARIANCE REQUESTS

No variance requests have been received.

XIV. COMPLIANCE HISTORY: None

XV. CERTIFICATION

This permit is in the process of certification by the State agency following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

XVI. FINAL DETERMINATION

The public notice describes the procedures for the formulation of final determinations.

XVII. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION

NPDES Application for Permit to Discharge, Form 1 & 2E, received on September 18, 2018. Additional permit application information received on November 13, 2018.

B. State of Texas References

The State of Texas Water Quality Inventory, 13th Edition, Publication No. SFR-50, Texas Commission on Environmental Quality, December 1996.

"Procedures to Implement the Texas Surface Water Quality Standards via Permitting," Texas Commission on Environmental Quality, June 2010.

Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.9, September 23, 2014.

D. 40 CFR CITATIONS: Sections 122, 124, 125, 133, and 136

E. MISCELLANEOUS CORRESPONDENCE

Email from Michael Daniel, EPA, to Jim Afghani, EPA, dated December 20 & 24, 2018 and February 25, 2019 on critical conditions information.

The Commission adopted the Draft 2014 Texas 303(d) List on June 3, 2015. The EPA approved the 2014 Texas 303(d) List on November 19, 2015